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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/714,790

11/14/2003

Laurence Bigio

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05/18/2004

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EXAMINER

ROY, SIKHA

ART UNIT

PAPER NUMBER

2879

DATE MAILED: 05/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

14

## Office Action Summary

Applicati n No.

10/714,790

Applicant(s)

BIGIO ET AL.

Examiner

Sikha Roy

Art Unit

2879

-- The MAILING DATE of this communication appears n the cover sheet with th correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4,7-10,12,13,16,20 and 21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4,7-10,12,13,16,20 and 21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachm nt(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 1103.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

The Preliminary Amendment, filed on May 4, 2004 has been entered and is acknowledged by the Examiner.

Cancellation of claims 5,6,11,14,15,17-19 has been entered.

#### ***Drawings***

The drawing in Fig.5 is objected to because of following.

The reference-emitting angle  $\sigma$  should be replaced by alpha ( $\alpha$ ) as mentioned in the specification (page 6 line 25). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

#### ***Specification***

The disclosure is objected to because of the following informalities:

This application claims the benefit of earlier U.S. filing date and hence the statement that, "This is a continuation of design Application No. 09/603,025 filed June 6, 2000" should appear in the first sentence of the specification.

Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 7-10, 12, 16, 20, 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,660,462 to Bockley et al. in view of U.S. Patent 5,506,471 to Kosmatka et al., and further in view of U.S. Patent 5,017,839 to Arlt et al.

Regarding claim 1, Bockley et al. disclose (column 8 lines 44-67 Fig. 6) a light source comprising a double-ended lamp envelope 204 made of a light transmissive material, wherein the envelope has an ellipsoidal portion inherently having first and second foci, disposed centrally between tubular portions disposed on opposite ends of the ellipsoidal portion, a filament 202 centrally disposed within the envelope, an infrared reflective filter coating 220 on outside surface of the envelope for transmitting visible radiation and reflecting infrared radiation back to the filament and a totally reflecting coating 222 over a portion of the ellipsoidal portion for reflecting both visible light radiation and infrared radiation back to the filament, for controlling the light output pattern and for increasing the efficiency of the lamp. Bockley further discloses (column 3 lines 25-36 Fig. 6) that the filament is located on the central axis of the ellipsoidally-shaped envelope and between the first and second optical foci such that the reflective coating reflects radiation emitted by the filament back to the filament.

Bockley implicitly discloses (column 8 lines 55-60) that the interference filter coating 220 can be fabricated as described in U.S. Patent 4,942,331 as having alternate layers of high and low refractive indices. This has also been evidenced by Kosmatka et

al. This interference coating transmits the visible radiation and reflects infrared portion of the emitted radiation back towards the filament and increases the efficacy of the filament.

Claim 1 differs from Bockley in that Bockley does not exemplify the totally reflecting coating disposed on opposite ends of the envelope subtending an angle of approximately  $45^\circ$  and less measured from an axis aligned with the filament.

Arlt et al. in the same field of endeavor disclose (column 3 lines 31-35 Fig.1) that coatings 8 and 7 are applied at the end regions of the envelope, the lateral axis of the lamp and a connection line between the center of the discharge vessel and the inner edge of the coating forms an angle between  $50^\circ$  and  $55^\circ$  and hence the edge of the coating subtends an angle preferably between  $40^\circ$  ( $90^\circ-50^\circ$ ) and  $35^\circ$  ( $90^\circ-55^\circ$ ) from the axis aligned with the filament. Arlt et al. further disclose (claim 8) the coating thus quite well covers the space behind the electrodes and so all the radiation emitting in this area are reflected back upon operation of the lamp.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify the totally reflecting coating of Bockley et al. disposed such that it subtends an angle between  $40^\circ$  and  $35^\circ$  as taught by Arlt et al. This specific position of the coating provides benefit of well covering the area behind the filament and reflecting all the radiation emitted in this area back to the filament and increases the efficiency of the lamp as disclosed by Bockley.

Regarding claims 2 and 3 Bockley et al. disclose a pair of lead wires connected to opposite ends of the filament.

Referring to claim 7 Arlt discloses (column 9 lines 40-43) the coating on the end portions of the discharge vessel reflecting visible and invisible radiation back towards the filament.

Regarding claims 8 and 9 Arlt discloses (column 3 lines 31-35 Fig.1) the lateral axis of the lamp and a connection line between the center of the discharge vessel and the inner edge of the coating forms an angle preferably between  $50^{\circ}$  and  $55^{\circ}$  and hence the edge of the coating subtends an angle preferably between  $40^{\circ}$  ( $90^{\circ} - 50^{\circ}$ ) and  $35^{\circ}$  ( $90^{\circ} - 55^{\circ}$ ) from the axis aligned with the filament.

Regarding claim 10 Bockley et al. disclose all the limitations which are same as claim 1 and additionally the specularly reflective coating made of aluminum, silver (column 5 lines 55-60) directing the radiation back to the filament.

Regarding claims 12 and 21 Bockley and Arlt et al. disclose the totally reflecting coating disposed on end regions of the ellipsoisal portion of the envelope and tubular portions extending from the opposite ends of the ellipsoidal portion.

Claim 16 essentially recites the same limitation as of claim 7 and hence is rejected for the same reason.

Regarding claim 20 Bockley et al. disclose (Fig. 1) the light source mounted in a reflector 14 receiving visible light from the light source, the totally reflecting coating matching useful reflecting areas of the reflector.

Claims 4 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,660,462 to Bockley et al., U.S. Patent 5,506,471 to Kosmatka et al., and

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U.S. Patent 5,017,839 to Arlt et al. and further in view of U.S. Patent 4,375,605 to Fontana et al.

Regarding claim 4 Bockley and Arlt do not explicitly disclose the length of the filament fitting between the first and second optical foci of the ellipsoidal portion.

Fontana et al. in analogous art of ellipsoidal envelope of an incandescent lamp disclose (column 6 lines 11-15) the filament mounted along the major axis and its length fitting within the two foci of the major axis of the envelope. Fontana et al. further disclose (column 5 lines 28-40) that because of this design, a substantial portion of the reflected radiation reaches and hence increases the temperature of the filament producing a greater lumen output.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify the length of the filament of Bockley et al., Kosmatka and Arlt fitting between the first and second optical foci of the ellipsoidal portion of the envelope as suggested by Fontana et al. for reflecting a substantial portion of the radiation on the filament and increasing its temperature and thus producing a greater lumen output.

Claim 13 essentially recites the same limitation as of claim 4 and hence is rejected for the same reason.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1 and 10, filed September 30, 2003 have been fully considered but they are not persuasive. In response to applicants' argument that U.S. Patent 5,017,839 to Arlt et al. is non-analogous art the Examiner

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respectfully disagrees. U.S. Patent 5,660,462 to Bockley et al. and Arlt both disclose light source with infra-red and total reflecting coating on the lamp envelope.

Furthermore Arlt discloses (claim 8 column 9 lines 40-43) the motivation (same as that of the applicants) that the coating of total reflecting film on the end portions adjacent to press seal reflects both visible and invisible radiation back inside the envelope resulting in enhancement of the efficiency of the lamp and hence combination with reference U.S. Patent 5,660,462 to Bockley is proper.

#### ***Contact Information***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikha Roy whose telephone number is (571) 272-2463. The examiner can normally be reached on Monday-Friday 8:00 a.m. – 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (571) 272-2457. The fax phone number for the organization is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

S.R.

Sikha Roy  
Patent Examiner  
Art Unit 2879

  
ASHOK PATEL  
PRIMARY EXAMINER